

Description

A SECTIONING APPARATUS FOR A PROTECTIVE FORM-FITTING COVER OF AN OBJECT

BACKGROUND OF INVENTION

[0001] The present invention claims priority from U.S. Provisional Application Serial No. 60/428,983, entitled "Shrink-wrap Tape", filed November 25, 2002.

[0002] The present invention relates to protective covers for vehicles and trailers. More particularly, the present invention relates to an apparatus for sectioning a protective cover to allow for reuse thereof and ingress and egress therethrough.

[0003] Traditionally, various vehicles and trailers, including boats, recreational vehicles, campers, and utility trailers have been winterized and stored during cold periods of the year, such as during winter months. The winterization and storage of an object protects against not only the cold temperatures, but also against environmental elements,

such as rain, snow, sleet, wind, ice, and ultra violet rays, such as in sunlight. Without such protection, damage can occur to the protected object, which can be costly to repair or replace.

[0004] One technique that is commonly used to provide the stated protection includes the wrapping of the object with a material that can conform or be form fitted over the object and is weather resistant. Materials often used are of the type that can shrink in size and accurately conform and tightly fit over the object. This style of material is commonly referred to as "shrink-wrap" material. The tight fit prevents dust, dirt, water, and wind from getting into and coming in contact with the object, as well as aid in prevention of the material from separating from the object during transportation of the object or during high wind conditions.

[0005] The shrink-wrap material cannot be reused. Shrink-wrap material is typically applied to an object sometime in the fall and removed and discarded in the spring. Once the shrink-wrap material has been applied to an object, it is conformed to that object and must be cut to be removed. The material has an original or pre-application state and a shrunk or applied state. The material can only transition

from the original state to the applied state. The material cannot be reused on the same object or be form fit to another object. Thus, the applied material when removed must be disposed. Also, once the material has been applied, one cannot access the interior of the object without the removal of the shrink-wrap material. Since the material cannot be reapplied, access to the object is generally undesirable unless necessary.

[0006] The application of the shrink-wrap material can be labor-some, time consuming, and costly. The application of the material also requires special tools and skills in cutting, applying, and shrinking of the material.

[0007] Thus, there exists a need for an improved form fit object covering technique for protection of an object that allows for cover reuse, minimizes disposal, increases ease in applying the cover, and provides easy access to the object.

SUMMARY OF INVENTION

[0008] The present invention provides a sectioning apparatus for a form-fitting cover of an object. The sectioning apparatus includes multiple material coupling members that are coupled to at least one portion of the form-fitting cover. A separating assembly is coupled to the material coupling members and is separable into multiple separation mating

members. The separating assembly separates the form-fitting cover into multiple sections.

[0009] The embodiments of the present invention provide several advantages. One advantage provided by multiple embodiments of the present invention is the ability of sectioning a form-fitting cover of an object. In so doing, the stated embodiments allow for the removal of a portion of the form-fitting cover from and access to the object.

[0010] Another advantage provided by multiple embodiments of the present invention is the provision of a sectioning apparatus that allows for the reuse of a form-fitting cover. As such, the stated embodiments minimize the disposal and increase the usable life of a form-fitting cover. The stated embodiments also increase ease in applying the cover and ingress and egress of the object through the cover. Furthermore, the present invention is versatile in that it may be applied to various lock assemblies and ignition systems.

[0011] Furthermore, another advantage provided by an embodiment of the present invention is the provision of a sectioning apparatus that is in the form of an adhesive tape. The stated embodiment allows for the easy application of the sectioning apparatus and separation of a form-fitting

cover.

[0012] Moreover, another advantage provided by an embodiment of the present invention is the provision of a sectioning apparatus that allows for the easy coupling and sealing of multiple sections of a form-fitting cover.

[0013] The present invention itself, together with further objects and attendant advantages, will be best understood by reference to the following detailed description, taken in conjunction with the accompanying drawing.

BRIEF DESCRIPTION OF DRAWINGS

[0014] For a more complete understanding of this invention reference should now be had to the embodiments illustrated in greater detail in the accompanying figures and described below by way of examples of the invention wherein:

[0015] Figure 1 is a cross-sectional view of a sectioning apparatus in a pre-application state in accordance with an embodiment of the present invention;

[0016] Figure 2 is a cross-sectional view of an object cover assembly having the sectioning apparatus of Figure 1 in a post-application state in accordance with an embodiment of the present invention;

[0017] Figure 3 is a side view of a sectioning apparatus rolled up

in accordance with an embodiment of the present invention;

[0018] Figure 4 is a cross-sectional view of a sectioning apparatus utilizing grommets in addition to separation mating members in accordance with another embodiment of the present invention;

[0019] Figure 5 is a cross-sectional view of a sectioning apparatus utilizing a separating assembly having hook, loop, and zip-lock type elements as separation mating members in accordance with another embodiment of the present invention;

[0020] Figure 6 is a cross-sectional view of a sectioning apparatus utilizing zip-lock type elements as separation mating members in accordance with another embodiment of the present invention;

[0021] Figure 7 is a cross-sectional view of a sectioning apparatus utilizing zipper elements as separation mating members and a sealing flap in accordance with another embodiment of the present invention; and

[0022] Figure 8 is a method of applying and separating a section of a form-fitting cover for an object in accordance with another embodiment of the present invention.

DETAILED DESCRIPTION

[0023] In the following figures the same reference numerals will be used to refer to the same components. While the present invention is described primarily with respect to an apparatus for sectioning a protective cover of an object to allow for the reuse of the cover and ingress and egress of the object, the present invention may be adapted and applied in various applications. The present invention may be applied in the environmental industry, such as on decontamination units, as well as in the construction industries, such as to doors and windows of a structure. The present invention may be applied to form-fitting material covers and to non-form-fitting material covers.

[0024] In the following description, various operating parameters and components are described for one constructed embodiment. These specific parameters and components are included as examples and are not meant to be limiting.

[0025] Also, in the following description the term "object" may refer to any article that may be stored or winterized. An object may include any vehicle or trailer. An object may be in the form of a boat, a recreational vehicle, a utility trailer, a camper, an automobile, or other object known in the art.

[0026] Referring now to Figures 1 and 2, cross-sectional views of

a sectioning apparatus 10 in a pre-application state and an object cover assembly 12 having the sectioning apparatus 10 in a post-application state are shown in accordance with an embodiment of the present invention. The object cover assembly 12 includes the sectioning apparatus 10 and a form-fitting cover 14. The sectioning apparatus 10 includes multiple material coupling members 16 and a separating assembly 18. The coupling members 16 are coupled to one or more portions 20 of the cover 14. The separating assembly 18 is coupled to the coupling members 16 and is separable into multiple separation mating members 22. The separating assembly 18 separates the cover 14 into multiple sections 24.

[0027] The coupling members 16 may be in various forms and may be coupled to the cover 14 utilizing various techniques. The coupling members 16 may include attachment elements, such as adhesive elements, snap elements, locking elements, stitching elements, other elements known in the art, or a combination thereof. The coupling members 16 may be of various forms, size, shapes, and styles. In the embodiment as illustrated, the coupling members 16 include a first material coupling member 26 and a second material coupling member 28.

The coupling members 16 include adhesive elements or layers 30, which are used to adhere the members 16 to the cover 14. The coupling members 16 have a non-adhesive side 32, which allows for the rolling up of the sectioning apparatus 10 without the adhesion of the coupling members 16 to each other or to themselves.

[0028] The separating assembly 18 may also be in various forms, size, shapes, and styles. The separating assembly 18 may include a first separation mating member 34 and a second separation mating member 36, as shown. The mating members 22 may be adhesively coupled to the coupling members 16 or via some other attachment technique known in the art. Although the mating members 22 are shown as having hook elements 38 and loop elements 40, the mating members 22 may have other elements such as grommet elements, snap elements, locking elements, zipper elements, or other elements known in the art, some of which are shown with respect to the embodiments of Figures 4–7. One example of hook elements and loop elements that may be used are Velcro® elements.

[0029] The sectioning apparatus 10 when in the pre-application state may also include protection elements 42. The protection elements 42 are coupled to the coupling members

16 and provide protection thereof. The protection elements 42 may be in the form of plastic wrap, wax paper, non-stick paper, or may be in the form of some other protective non-stick materials known in the art. The protection elements 42 may have one or more nonstick sides, such as sides 44, for allowing easy removal of the protection elements 42 from the coupling members 16 and to further allow for the rolling up of the sectioning apparatus 10.

[0030] The cover 14 may be in the form of a shrink-wrap material or other material that may be form fitted to an object. The cover 14 may be formed of various materials known in the art and be of various sizes, shapes, and styles. The cover 14 is cut along the sectioning apparatus 10 and between the coupling members 16 in a separating area or joint 46, to provide access to the object.

[0031] Referring now to Figure 3, a side view of the sectioning apparatus 10 rolled up in accordance with an embodiment of the present invention is shown. The sectioning apparatus 10 may be in the form of a tape and may be rolled onto a roller 50 as shown. The nonstick sides 32 and 44 of the coupling members 16 and protection elements 42 allow for easy rolling and unrolling of the sectioning ap-

paratus 10. The sectioning apparatus 10 may be dispensed in a similar fashion as a conventional roll of tape. When in the form of a tape the sectioning apparatus 10 may be easily storage, packaged, and shipped.

[0032] Referring now to Figure 4, a cross-sectional view of a sectioning apparatus 60 utilizing grommets 62 in addition to separation mating members 64 and in accordance with another embodiment of the present invention is shown. The sectioning apparatus 60 includes material coupling members 66 and a separating assembly 68, which has the pair of grommets 62 and the mating members 64. Each grommet has a first press-fit end 70 and a second press-fit end 72. The first press-fit ends 70 are coupled to the coupling members 66. The second press-fit ends 72 are coupled to the mating members 64. Although the mating members 64 are shown as being in such a form as to be tied, they may be in some other form. The mating members 64 may be in the form of rope or string as shown and have snagging ends 74, to aid in the prevention of the mating members 64 from becoming untied.

[0033] Referring now to Figure 5, a cross-sectional view of a sectioning apparatus 10" utilizing a separating assembly 82 having hook, loop, and zip-lock type elements as separa-

tion mating members in accordance with another embodiment of the present invention is shown. The sectioning apparatus 10' is similar to the sectioning apparatus 10, but further includes the zip-lock type elements 84. The zip-lock elements 84 further aid in maintaining the coupling of the sections 24 and in addition provide a fluid tight seal 86. The fluid seal 86 aids in preventing passage of air, liquids, and solids between the mating members 82. Any number of the zip-lock elements 84 may be utilized. In the embodiment as illustrated the zip-lock elements 84 extend parallel to the hook elements 38 and the loop elements 40.

[0034] Referring now to Figure 6, a cross-sectional view of a sectioning apparatus 10" utilizing zip-lock type elements 84' as separation mating members in accordance with another embodiment of the present invention is shown. The sectioning apparatus 10" is similar to the sectioning apparatus 10', but does not include the hook elements 38 and the loop elements 40. The zip-lock type elements 84' may be used alone depending upon the application.

[0035] Referring now to Figure 7, a cross-sectional view of a sectioning apparatus 90 utilizing zipper elements as separation mating members and a sealing flap 94 in accordance

with another embodiment of the present invention is shown. The sectioning apparatus 90 has a separating assembly 96 that includes mating members 92 that are in the form of zipper elements. The sealing flap 94 is coupled to the coupling members 98 and covers an exterior portion 100 of the separating assembly 96. In the embodiment as illustrated, the sealing flap 94 is coupled or formed as an integral part of a first material coupling member 102, overlaps the mating members 92, and is coupled to a second material coupling member 104 via a seal 106. The seal 106 may be in the form of an adhesive or other attachment mechanism. Although the sealing flap 94 is shown as being utilized over zipper elements, it may be utilized over other mating elements.

[0036] Referring now to Figure 8, a method of applying and separating a section of a form-fitting cover for an object in accordance with another embodiment of the present invention is shown. A form-fitting cover, such as cover 14, is applied to an object utilizing methods known in the art. The cover may be in the form of a shrink-wrap material and be shrunk over the object to form fit or conform to the shape of the object. The form fitting of the cover provides a tightly sealed barrier between the object and the

environment. This is generally denoted by step 120.

[0037] Parameters of a sectioning apparatus, such as apparatuses 10, 10', 10", 60, and 90, are determined, such as size, shape, and style, as generally denoted by step 122. The parameters may vary depending upon the application including the size, shape, style, and type of object being covered and the desired amount and size of the cover sections. The size of the cover sections to be separated from the cover as well as their layout may also be determined.

[0038] When protective packaging elements, such as protection elements 42, are utilized, they are removed from the sectioning apparatus before application to the cover, as generally denoted by step 124.

[0039] The sectioning apparatus is then coupled to the cover as a whole unit. The material coupling members, such as coupling members 16 and 66, are coupled to desired portions of the cover, as generally denoted by step 126. In one embodiment of the present invention, the coupling members 16 are rolled over and adhered to the cover, via the adhesive layers 30.

[0040] Separation mating members of a separating assembly, such as mating members 22, 64, and 82, are separated to

provide access to the cover beneath the separating assembly, as generally denoted by step 128. The mating members 22, 64, and 82 may be untied, unlocked, unhooked, unzipped, unsnapped, or separated using some other technique known in the art.

- [0041] The cover is cut along the sectioning apparatus between the coupling members, such as along the sectioning apparatus 10 between the coupling members 16, as shown in Figure 2 and as generally denoted by step 130. The cover may be cut using a utility knife or other cutting tool. Upon cutting of the cover the object may be accessed through the mating members, as generally denoted by step 132. One or more sections, such as sections 24, of the cover may be removed from the object or sufficiently separated to allow access to the object. The sections may then be reapplied to the object, as denoted by step 134. In reapplication of the sections, since the sections have already been conformed to the object, no cutting, sizing, or shrinking of the cover is needed. As such the sections may be reapplied without need for special tools or skills.
- [0042] The mating members, such as members 22, 64, and 82 are then mated together to maintain a tight form-fit cover over the object, as generally denoted by step 136. The

mating members may be tied, locked, hooked, zipped, or mated via some other technique known in the art. When a sealing flap, such as flap 94, is utilized the flap may overlap the mating members and seal to the coupling members, as shown in Figure 7. The sections may be removed and reapplied to the object an indefinite amount of times.

[0043] The present invention provides a simple, inexpensive, and easy technique for allowing ingress and egress of an object after application of a form-fitting cover. The present invention allows the form-fitting cover to be removed in part or fully and then be reapplied. The present invention reduces costs involved in providing a protective form-fitting cover to an object.

[0044] While the invention has been described in connection with one or more embodiments, it is to be understood that the specific mechanisms and techniques which have been described are merely illustrative of the principles of the invention, numerous modifications may be made to the methods and apparatus described without departing from the spirit and scope of the invention as defined by the appended claims.